PATENT COOPERATION TREATY

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INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)* see form PCT/ISA/210 (second sheet)	
Applicant's or agent's file reference see form PCT/ISA/220	**FOR FURTHER ACTION** See paragraph 2 below
International application No. PCT/JP2005/007757	International filing date *(day/month/year)* 19.04.2005
Priority date *(day/month/year)* 19.04.2004	
International Patent Classification (IPC) or both national classification and IPC B41J2/175, B41J2/20	
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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2005/007757

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ in written format

   ☐ in computer readable form

   c. time of filing/furnishing:

   ☐ contained in the international application as filed.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-10,12-21
	No:	Claims	1,11
Inventive step (IS)	Yes:	Claims	2-10,12-21
	No:	Claims	1,11
Industrial applicability (IA)	Yes:	Claims	1-21
	No:	Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43*bis*.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

see form 210

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.1 Fig 10C is referred to as an embodiment of underlying application. This figure thus shows the last feature of claim 1 "the interval (Wc1 respectively Wc2) between the specific supplying part 95Y and another of the supplying parts (95B respectively 95M) adjacent thereto is greater than ***the intervals*** (Wc3 respectively Wc2+Wc1) between other supplying parts (95C-95M respectively 95M-95B) excluding the specific supplying part (95Y)". Consequently, the application appears to allow in claim 1 "***the intervals***" to be interpreted as "***one of the intervals***".

1.2 EP1057644A shows:

An ink container (supplementary/main tank 22) connectable and disconnectable to and from an ink supply path (501A, figs 43/44), comprising:
a plurality of ink containing parts (Y,C,M,B in 22) for containing three or more different inks; and
a plurality of supplying parts (521A; paragraph 122) which can be connected and disconnected to and from the ink supply path (501A) and which can supply plural types of ink contained in the plurality of ink containing parts, wherein
the plurality of supplying parts (521A) include a specific supplying part for supplying the ink (Yellow to 501A of 501Y) which undergoes the most significant color change attributable to color mixing of the inks;
the plurality of supplying parts (521A) are disposed at respective intervals, and
the interval between the specific supplying part (501A/501Y) and another (501A/501B) of the supplying parts adjacent thereto (see fig 44: interval between 501A/501Y and 501A/501B) is greater than one of the intervals (interval between 501A/501C and 501A/501M) between other supplying parts (501A/501M, 501A/501C) excluding the specific supplying part, cf. claim 1.

Likewise this document shows :
An inkjet printing head (501/502) connectable to and from an ink container (supplementary/main tank 22), comprising:

a plurality of ink ejecting parts 502 capable of ejecting three or more different inks; and
a plurality of receiving parts (fig 44: 501A/501C, 501A/501M, 501A/501Y, 501A/501B) which can be connected and disconnected to and from the ink container (22) and which can receive the plural types of ink ejected by the plurality of ink ejecting parts from the ink container, wherein the plurality of receiving parts (fig 44: 501A/501C, 501A/501M, 501A/501Y, 501A/501B) include a specific receiving part (501A/501Y) for receiving the ink (Yellow) which undergoes the most significant color change attributable to color mixing of the inks;
the plurality of receiving parts (501A/501C, 501A/501M, 501A/501Y, 501A/501B) are disposed at respective intervals (see fig 44); and
the interval between the specific receiving part (501A/501Y) and another (501A/501B) of the receiving parts adjacent thereto (see fig 44: interval between 501A/501Y and 501A/501B) is greater than one of the intervals (interval between 501A/501C and 501A/501M) between other receiving parts (501A/501M, 501A/501C) excluding the specific receiving part of interest, cf claim 11.

1.3 Therefore, the subject-matter of claims 1 and 11 is not new (Article 33(2) PCT).

2. If claim 1 and 11 were amended including the feature on page 37 line 11, then the document EP1375155A is regarded as being the closest prior art to the subject-matter of claims 1 and 11, and shows:

2.1 An ink container 12 connectable and disconnectable to and from an ink supply path 94,95,96, comprising:
a plurality of ink containing parts 86,87,88 for containing three or more different inks (Y,C,M, paragraphs 31 and 34); and
a plurality of supplying parts 89a,89b,89c which can be connected and disconnected to and from the ink supply path and which can supply plural types of ink contained in the plurality of ink containing parts, wherein
the plurality of supplying parts 89a,89b,89c include a specific supplying part for supplying the ink Y which undergoes the most significant color change attributable to color mixing of the inks;
the plurality of supplying parts 89a,89b,89c are disposed at respective intervals (fig

6), cf the first part of claim 1.

The subject-matter of claim 1 would differ from this known container in that: "the interval between the specific supplying part and another of the supplying parts adjacent thereto is greater than one or more ~~the~~ interval(s) between other adjacent supplying parts excluding the specific supplying part"

2.2 An inkjet printing head 68 connectable to and from an ink container 12, comprising: a plurality of ink ejecting parts capable of ejecting three or more different inks; and a plurality of receiving parts 94,95,96 which can be connected and disconnected to and from the ink container 12 and which can receive the plural types of ink ejected by the plurality of ink ejecting parts from the ink container, wherein the plurality of receiving parts 94,95,96 include a specific receiving part for receiving the ink Yellow which undergoes the most significant color change attributable to color mixing of the inks;
the plurality of receiving parts 94,95,96 are disposed at respective intervals, cf. the first part of claim 11.

The subject-matter of claim 11 would differ from this known container in that "the interval between the specific receiving part and another of the receiving parts adjacent thereto is greater than one or more ~~the~~ interval(s) between other adjacent receiving parts excluding the specific receiving part of interest".

2.3 The subject-matter of claims 1 and 11 would then be new (Article 33(2) PCT).

2.4 The problem to be solved by the present invention may be regarded as to attain both miniaturization of the apparatus and also high quality printing.

2.5 The solution to this problem proposed in amended claims 1 and 11 of the present application would be considered as involving an inventive step (Article 33(3) PCT) To reduce the risk of color mixing of the most sensitive ink color and also attain miniaturization by enlarging only the interval to the most sensitive ink color, is not derivable from the available art.

Re Item VI

Certain documents cited

WO2004/096559A ha a priority date of 25.04.2005 which is before the priority date of the underlying application of 19.04.2004. It was published on 11.11.2004 after the priority date but before the filing date of 19.04.2005 of the underlying application. With page 12 lines 23 to 25 it discloses the arrangement of the ink chambers in the order Yellow Magenta Cyan. With page 13 lines 21-23 it discloses positioning needle 37 between yellow needle 36 and magenta needle 36. In combination with the teaching from the drawings 2a,3,4,9,11 and 12 it is then inevitable that the distance between yellow and magenta is greater then between magenta and cyan.

Thus all claims, also when amended according to points 2.1 and 2.2 above, are considered known from this document.